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FEED STUFF ANALYSES.

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Edited by H. B. McDONNELL, Professor of Chemistry.

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ADDRESS

Chemical Department

Maryland Agricultural College,

COLLEGE PARK, MD.

ANALYSES OF

Commercial Feeding Stuffs Sold in Maryland.

BY THE CHEMICAL DEPARTMENT OF

THE MARYLAND AGRICULTURAL COLLEGE.

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This bulletin contains the results of analysis of feeding stuffs made in this laboratory from January to May, 1909, inclusive. The arrangement is in alphabetical order of manufacturers.

To the usual analysis for Protein and Fat we have added that of Fiber, as the latter is of value in judging the purity of the feed.

Protein is the most important constituent of the feed, and the most expensive. It is absolutely necessary to the animal to build and repair muscle, nerve, sinew, hair, feathers, etc.; in fact, enters into the composition of all parts of the body. The amount of protein is obtained by finding the amount of nitrogen and multiplying this by 6¼.

Fat, or ether extract, is obtained by extracting a small part of the sample with ether for sixteen hours. Fat serves as a fuel or energy producer, or to build fatty tissue which is a reserve supply for the animal. Starch and sugar serve the same purpose, but are less than half as efficient. Protein can also serve as an energy and fat-producer, but its main function should be as a tissue builder.

Fiber is the indigestible part of the feed and, from the commercial standpoint, has no value as feed. Hulls, straw, etc., are high in fiber, so that the amount of fiber serves as an index of the amount of contamination with such materials. In the case of any given feed, as cottonseed meal, a low protein content will be accompanied with a corresponding high fiber content, caused by the added hulls.

*Resigned Feb. 1.
†Resigned Apr. 1 to become Assistant Chemist for the Pa. R. R.

It should be remembered that in coarse materials which are necessarily low in protein — as straw, oat hulls, peanut hulls, etc.—a smaller percentage of the protein present is digestible than in the case of high-grade feeds.

This department wishes to have the coöperation of feeders and dealers in the inspection of concentrated feeds and will be glad to analyze samples, provided samples of the same feeds have not been recently analyzed in the department. Before sending samples write for blanks and instructions. We will not analyze samples of medicines, "condition powders," condimental feeds, or the so-called "feeds" that are "five feeds for a cent" to be mixed with the regular feeds. Careful experiments at a number of the experiment stations have proved that these medicinal "feeds" are of no practical value.

The examination of the common feeds, as bran, middlings, corn meal, etc., will generally be limited to a microscopical examination for adulteration, as the slight variation in the chemical composition of the pure articles will not justify the expense of making a regular chemical analysis.

Concentrated feeding stuffs are generally by-products and the analysis of any one of them will vary some, depending on the method of preparation, etc.

The following should be the minimum analysis of the feeds named, and are given for comparison:

	PROTEIN.	FAT.	CRUDE FIBER (Usual Limits..)
Cotton Seed Meal	40 Per Cent.	8 to 9 Per Cent.	6 to 8 Per Cent.
Linseed or Flax Seed Meal— Oil Cake Meal	36 "	7 "	8 to 9 "
Gluten Meal	33 to 36 "	2 "	1½ to 2½ "
Gluten Feed	25 "	3 "	7 to 9 "
Germ Oil Meal	23 "	10 "	
Malt Sprouts	23 "	1 to 2 "	12 to 14 "
Dried Brewers' Grains	20 "	3 "	10 to 12 "
Wheat Middlings	17 to 18 "	5 "	4 to 7 "
Wheat Bran	15 "	4 to 5 "	9 to 11 "
Ground Oats	11 to 12 "	4 to 5 "	8 to 11 "
Corn Meal	9 to 11 "	3 to 5 "	1 to 2½ "
Oat Straw	3 to 5 "	1 to 1½ "	35 to 40 "
Oat Hulls	3 to 4 "	1 to 1½ "	28 to 32 "
Corn Cobs	2 to 3 "	½ to 1 "	30 to 33 "
Meat and Bone Meal	40 "	10 "	
Meat Meal	60 "	10 "	

It should be remembered that the analysis does not indicate the palatability of the feed, or if it is musty, moldy or sour. These conditions are generally easily recognized by simple inspection—the appearance, odor, etc., or by the animals refusing the feed. Moldy corn is frequently kiln-dried and, while this prevents further growth of the mold, it does not restore the feed to prime condition. It is not relished by animals, and is unwholesome. It is false economy to use damaged feed, even if the feed is "cheap."

No.	Name of Manufacturer or Agent.	Name of Feeding Stuffs.	Place of Sampling.	Protein.		Fat or Ether Extract.		Crude Fibre.	
				FOUND.	Guaranteed.	FOUND.	Guaranteed.	FOUND.	Guaranteed.
19835	American Alfalfa Food Co., Wichita, Kansas.	Acme Dairy Food.	Baltimore	13.95	17.62	3.48	3.29	14.43	12.49
19767	American Cotton Oil Co., New York, N. Y.	Choice Cotton Seed Meal.	Baltimore	42.74	41.00	9.54	9.00	6.88	.....
19831	Ajax Milling & Feed Co., New York, N. Y. .	Ajax Flakes.....	Cardiff	28.78	31.00	12.47	12.00	13.04	.....
19806	American Linseed Co., New York, N. Y.	Old Process Oil Meal.	Laurel	33.70	32.00	5.98	5.00	7.47	5.50
19768	" " "	Old Process Oil Meal.	Baltimore	34.40	32.00	7.33	5.00	6.95	9.00
19760	American Milling Co., Chicago, Illinois.	Sucrene Dairy Feed.	Philopolis	18.08	16.50	6.22	3.50	9.40	12.00
19820	" " "	Sucrene Horse and Mule Feed .	Pocomoke City.	10.35	10.00	5.37	3.00	7.03	13.50
19769	Baugh & Sons Co., Baltimore, Md.	Meat Meal for Poultry.	Baltimore	66.70	50.00	14.41	14.00	1.01	.....
19803	" " "	Meat Meal.....	Muirkirk	70.98	50.00	13.79	14.00	.82	.....
19770	" " "	Special Ground Bone for Poultry.	Baltimore	26.94	.....	2.17	....	1.40	.....
19836	Blatchford Calf Meal Factory, Waukegan, Ill.	Blatchford Calf Meal.	Baltimore	35.63	25.00	5.55	5.00	4.93	.....
19771	J. Bolgiano & Son Co., Baltimore, Maryland.	Square Deal Chick Food.	Baltimore	9.21	10.01	2.95	3.89	1.63	.....
19772	" " "	Square Deal Chick Starter.	Baltimore	8.51	9.48	3.72	4.14	1.35	.....
19 73	" " "	Square Deal Pigeon Food.	Baltimore	10.71	11.06	3.03	4.44	1.64	.....
19774	" " "	Square Deal Poultry Food.	Baltimore	10.35	11.50	4.09	3.87	2.30	.....
19824	F. W. Brode & Co., Memphis, Tennessee.	Owl Brand Pure Cotton Seed Meal.	Taneytown ...	41.16	41.00	10.10	6.00	5.65	.....
19837	John J. Buffington & Co., Baltimore, Md.	Buff Brand Chick Feed.	Baltimore	9.65	10.00	2.57	3.00	2.15	5.00
19838	" " "	Buff Brand Scratch Feed.	Baltimore	11.14	10.00	6.07	3.00	2.62	5.00
19800	Central Feed Co., Baltimore, Md.	Ready Horse Feed.	Baltimore	9.48	.....	3.91	....	4.02	....

	Tennessee.		Cotton Seed Meal.								
19837	John J. Buffington & Co., Baltimore, Md.		Buff Brand Chick Feed.	Baltimore	9.65	10.00	2.57	3.00	2.15	5.00
19838	"	"	Buff Brand Scratch Feed.	Baltimore	11.14	10.00	6.07	3.00	2.62	5.00
19800	Central Feed Co., Baltimore, Md.		Ready Horse Feed.	Baltimore	9.48	.....	3.91	....	4.02	....
19807	Corn Products Refining Co., New York, N. Y.		Buffalo Gluten Feed.	Laurel	27.03	23.00	4.22	2.50	6.97	8.50
19834	Corno Mills Co., St. Louis, Mo...		Corno Chick Feed..	Baltimore	9.94	10.00	3.01	3.50	2.38	3.40
19775	Cyphers Incubator Co., Buffalo, N. Y.		Chick Food.....	Baltimore	11.14	10.54	2.89	3.40	3.27	.....
19776	"	"	Developing Food..	Baltimore	10.79	10.90	3.14	3.00	2.20	.....
19777	"	"	Forcing Food.....	Baltimore	10.88	12.80	3.33	3.50	2.85	.....
19778	"	"	Laying Food.....	Baltimore	18.69	17.31	3.39	3.80	3.45	.....
19779	"	"	Pigeon Food.....	Baltimore	11.93	10.50	2.91	2.10	2.48	.....
19780	"	"	Scratching Food...	Baltimore	11.14	11.00	3.09	3.00	2.71	.....
19828	Darling & Co., Long Island City, N. Y.		Pure Ground Beef Scraps.	Preston	57.42	55.00	11.01	10.00	1.65	.....
19814	Albert Dickinson Co., Chicago, Illinois.		Crescent Chick Feed.	Hagerstown ...	9.48	10.50	3.17	3.00	2.10	5.00
19815	"	"	Pine Tree Scratch Feed.	Hagerstown ...	9.83	10.50	2.53	3.00	2.35	5.00
19816	"	"	Sun Chick Starter.	Hagerstown ...	9.83	10.50	3.27	3.00	2.30	5.00
19826	Douglas & Co., Cedar Rapids, Iowa.		Gluten Feed.....	Lineboro	23.60	22.00	4.93	4.00	8.86	....
19756	Dubois Brewing Co., Dubois, Pa...		Brewers Dried Grains.	Westminster ..	23.02	23.00	5.77	6.00	9.32	....
19808	Eastern Cotton Oil Co., Hertford, N. C.		Cotton Seed Meal..	Laurel	34.43	36.00	6.61	7.00	10.94	....
1982	Jonas E. Eby & Sons, Lancaster, Pennsylvania.		Crystal Old Dairy Feed.	Lineboro	17.81	16.50	5.91	3.50	11.65	....
19781	J. M. Frisch & Co., Baltimore, Md.		King Corn & Oat Feed.	Baltimore	8.16	8.00	4.08	4.00	10.17	.....
19782	F. W. Goeke & Co., St. Louis, Mo.		Holstein Sugar Dairy Feed.	Baltimore	16.94	15.00	3.78	3.00	11.78	15.00
19761	Great Western Cereal Co., Chicago, Ill.		Boss Chop Feed...	Cockeysville ..	8.42	8.00	4.62	3.50	9.26	11.00
19842	"	"	Sterling Chick Feed	Laurel	9.83	12.00	2.85	3.50	1.30	8.00
19841	"	"	Sterling Stock Feed	Baltimore	10.62	10.00	4.39	4.00	8.29	9.00
19817	George L. Harding, Binghamton, N. Y.		Uncle Sam Baby Chick Food	Hagerstown ...	10.97	10.00	2.82	2.00	1.50	1.00
19783	Highland Park Mfg. Co., Rock Hill, S. C.		Standard Cotton Seed Meal	Baltimore	40.89	40.08	8.30	7.50	7.35	....

No.	Name of Manufacturer or Agent.	Name of Feeding Stuffs.	Place of Sampling.	Protein.		Fat or Ether Extract.		Crude Fibre.	
				FOUND.	Guaranteed.	FOUND.	Guaranteed.	FOUND.	Guaranteed.
19784	W. T. Hutchins & Co., Baltimore, Md.	Matchless Brand Chick Feed	Baltimore	7.90	.....	3.21	....	1.22	.....
19310	" " "	Matchless Brand Chick Starter	Baltimore	9.56	.....	4.52	....	2.15	.....
19311	" " "	Matchless Brand Pigeon Feed	Baltimore	9.92	.....	4.15	....	1.78	.....
19785	" " "	Matchless Brand Poultry Feed	Baltimore	8.34	.....	3.26	....	1.50	.....
19330	Hunter Bros. Milling Co., St. Louis, Mo.	Prime Cotton Seed Meal	Silver Spring..	37.91	38.50	8.57	8.00	9.10	.....
19762	Charles A.. Krause Milling Co., Milwaukee, Wis.	Badger Dairy Feed	Cockeysville ..	19.04	18.00	3.91	4.00	9.88	12.00
19786	" " "	Badger Stock Feed	Baltimore	14.30	10.00	4.35	4.00	9.52	10.00
19799	S. L. Lamberd Co., Agent, Baltimore, Md.	Coarse Chicken Bone	Baltimore	25.27	.....	1.90	....	.56	.....
19737	Larrowe Milling Co., Detroit, Michigan.	Dried Beet Pulp..	Baltimore	8.87	8.00	.65	.50	17.67	20.00
19809	" " "	Dried Beet Pulp..	Laurel	9.65	8.00	.79	.50	19.32	20.00
19812	Milwaukee Grain and Feed Co., Milwaukee, Wis.	X X X Dairy Feed	Baltimore	18.16	16.00	3.02	2.80	8.45	10.00
19827	Model Milling Co., Buffalo, N. Y.	Model Nursery Chick Food	Laurel	10.88	10.00	2.98	2.75	2.88	.....
19819	" " "	Model Scratching Food	Hagerstown ...	11.67	12.00	3.08	2.50	2.20	.....
19788	Ninety Six Oil Mill, Ninety Six, S. C.	Standard Cotton Seed Meal	Baltimore	39.14	.....	7.35	....	8.78	.....
19829	North West Mills Co., Winona, Minnesota.	Sugarota Dairy Feed	Cardiff	17.20	15.00	6.52	3.00	9.77	....
19813	" " "	Sugarota Horse Feed	Baltimore	12.37	12.00	6.49	3.50	12.00	....
19839	Park & Pollard Co., Boston, Mass.	Dry Mash Feed...	Baltimore	18.43	20.00	4.18	3.00	5.69	....
19840	" " "	Intermediate Chick Feed	Baltimore	10.62	10.00	3.02	3.00	2.68	....
19789	Pennsylvania Primo Feed Co., Harrisburg, Pa.	Matchless Egg Maker	Cockeysville ..	13.34	13.50	3.36	6.00	2.45	3.00
19766	" " "	Modern Daiy Feed	Baltimore	25.27	26.81	5.26	6.55	16.68	....

19340	"	"	"	Intermediate Chick Feed	Baltimore	10.62	10.00	3.02	3.00	2.68	....
19789	Pennsylvania Primo Feed Co., Harrisburg, Pa.			Matchless Egg Maker	Cockeysville ..	13.34	13.50	3.96	6.00	2.45	3.00
19766	"	"	"	Modern Daiy Feed	Baltimore	25.27	26.81	5.26	6.55	16.68	....
19790	"	"	"	Pigeon Food.....	Cockeysville ..	11.50	10.44	3.53	3.50	3.13	2.54
19763	"	"	"	Primo Dairy Feed	Reisterstown ..	24.35	.....	5.13	....	16.72	....
19822	Quaker Oat Co., Chicago, Ill.....			Schumacker Calf Meal	Elkton	19.22	19.00	10.47	8.00	1.35	3.00
19764	"	"	"	Schumacker Stock Food	Reisterstown ..	10.44	10.00	3.83	4.00	12.03	....
19821	"	"	"	Victor Feed.....	Salisbury	7.72	7.50	3.12	3.00	11.32	....
19791	Ralston Purina Co., St. Louis, Mo.			Chick Size.....	Baltimore	11.23	11.00	3.70	3.60	2.84	4.00
19792	"	"	"	Scratch Size	Baltimore	10.35	11.00	3.08	3.60	2.92	4.00
19793	"	"	"	Purina Feed.....	Baltimore	13.08	.....	5.09	....	10.20	....
19794	W. G. Scarlett & Co., Baltimore, Maryland.			Oriole Brand H. G. Poultry Food	Baltimore	11.85	11.67	3.77	3.37	3.47	4.60
19795	"	"	"	Shield Brand H. G. Chick Feed	Baltimore	12.72	9.56	4.19	3.64	5.07	4.66
19796	C. S. Schermerhorn & Son, Baltimore, Md.			Prime Cotton Seed Meal	Baltimore	38.87	38.61	6.97	....	8.54	
19832	Schlitz Brewer Co., Milwaukee, Wisconsin.			Purely Dried Grains	Rising Sun ...	25.10	24.50	6.15	6.50	15.60	
19797	Sherwood Distilling Co., Cockeysville, Md.			Dairy Food.....	Cockeysville ..	15.88	18.00	11.37	10.00	14.65	
19798	Wm. A. Simpson & Co., Baltimore, Maryland.			Purity Poultry Food	Baltimore	10.44	10.50	2.30	3.00	2.72	4.00
19823	Southern Fibre Co., Portsmouth, Virginia.			Prime Cotton Seed Feed	Perryman	7.46	10.00	1.66	1.80	33.00	....
19843	Stobie Mills, St. Louis, Mo.....			Nitro Chick Feed..	Baltimore	10.71	10.00	2.79	3.50	2.27	3.40
19801	United Cereal Co., Chicago, Ill...			C. & O. Feed.....	Baltimore	8.07	7.00	5.01	4.40	11.18	....
19755	J. Lindsay Wells Co., Memphis, Tennessee.			Star Brand Cotton Seed Meal	Westminster ..	40.89	41.00	9.36	9.00	5.98	....
19802	Rich. C. Wells & Co., Baltimore, Maryland			O. C. Horse Feed..	Baltimore	10.71	.....	4.83	....	5.32	....
19765	Western Grain Products Co., Hammond, Ind.			Hammond Dairy Feed	White Hall...	15.71	17.00	5.91	3.00	11.43	....
19833	Wuichet Fertilizer Co., Dayton, Ohio.			Ground Beef Scraps	Baltimore	46.86	50.00	10.63	9.00	1.23	....

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